

| L Number | Hits | Search Text | DB | Time stamp |
|----------|------|--|-------|------------------|
| 2 | 1 | ("5404719").PN. | USPAT | 2002/03/06 13:56 |
| - | 1883 | ((60/297) or (422/168) or (422/169) or (422/170) or (422/171) or (422/174)).CCLS. | USPAT | 2002/03/06 13:55 |
| - | 87 | ((("60/297") or ("422/168") or ("422/169") or ("422/170") or ("422/171") or ("422/174")).CCLS.) and catalyst and oxide and exhaust and engine and (absorption or desorption) | USPAT | 2000/11/29 12:07 |
| - | 3 | ((("5388406") or ("5240682") or ("4755499")).PN. | USPAT | 2000/11/29 11:31 |
| - | 91 | ((("60/297") or ("422/168") or ("422/169") or ("422/170") or ("422/171") or ("422/174")).CCLS.) and catalyst and oxide and exhaust and engine and (absorption or desorption) | USPAT | 2000/11/29 12:08 |
| - | 1954 | ((60/297) or (422/168) or (422/169) or (422/170) or (422/171) or (422/174)).CCLS. | USPAT | 2001/05/06 22:18 |
| - | 797 | 422/\$.ccls. and (engine or automobile or automotive or car or exhaust) and catalyst and composition and (temperature or heat) | USPAT | 2002/03/05 14:17 |
| - | 316 | 422/\$.ccls. and (engine or automobile or automotive or car or exhaust) and catalyst and (exhaust with (composition or rich or lean)) and (temperature or heat) | USPAT | 2002/03/05 14:56 |
| - | 33 | 422/\$.ccls. and (engine or automobile or automotive or car or exhaust) and catalyst and (exhaust with (composition or rich or lean)) and (temperature or heat) and ((control or controller or controlled or regulated or regulator) near temperature) | USPAT | 2002/03/05 15:25 |
| - | 313 | (engine or automobile or automotive or car or exhaust) and catalyst and (exhaust with (composition or rich or lean)) and (temperature or heat) and ((control or controller or controlled or regulated or regulator) near temperature) | USPAT | 2002/03/06 10:25 |
| - | 45 | (engine or automobile or automotive or car or exhaust) and catalyst and (exhaust with (composition or rich or lean)) and (temperature or heat) and ((control or controller or controlled or regulated or regulator) near temperature) and (absorber or absorb or absorbent or absorbing or adsorb or adsorber or adsorbent or adsorbing) and (desorb or desorbing or desorbed or release or releasing or released) | USPAT | 2002/03/06 10:30 |

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199906

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=> s ep0580389/pn

L1

1 EP0580389/PN

(EP580389/PN)

=> s de4319294/pn or ep0540280/pn or us5607650/pn or ep0718478/pn or
de4339025/pn

1 DE4319294/PN ✓

(DE4319294/PN)

1 EP0540280/PN ✓

(EP540280/PN)

1 US5607650/PN ✓

(US5607650/PN)

1 EP0718478/PN ✓

(EP718478/PN)

1 DE4339025/PN ✓

(DE4339025/PN)

L2

5 DE4319294/PN OR EP0540280/PN OR US5607650/PN OR

EP0718478/PN

OR DE4339025/PN

=> s l1 or l2

L3

6 L1 OR L2

=> d l3 all 1-6

L3 ANSWER 1 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD

AN 97-164462 [15] WPIDS

CR 95-283634 [37]

DNN N97-135513 DNC C97-052947

TI Appts. for contacting catalyst absorber with combustion exhaust gases

-
comprises unit for regenerating spent catalyst absorber while
replacing

with new or regenerated absorber and absorber beds for alternate
absorption of pollutants.

DC E36 J01 X25

IN CAMPBELL, L E; DANZIGER, R N; DEBBAGE, L; GUTH, E D; KELLEY, E;
PADRON, S

PA (GOAL-N) GOAL LINE ENVIRONMENTAL TECHNOLOGIES

CYC 1

PI US 5607650 A 970304 (9715)* 16 pp B01D053-34 <--
ADT US 5607650 A CIP of US 94-192003 940204, US 95-529519 950918
FDT US 5607650 A CIP of US 5451558
PRAI US 95-529519 950918; US 94-192003 940204
IC ICM B01D053-34

AB US 5607650 A UPAB: 970410

Appts. for contacting catalyst absorber with combustion exhaust gases comprises: (a) unit for removing spent catalyst absorber from contact with

gases at the same time moving an equiv. amt. of new or regenerated catalyst absorber into contact with gases to maintain a specified outlet

pollution concn. limit, (b) at least two beds of catalyst absorber which

alternately are used for absorption of pollutants from the exhaust gases,

the beds being disposed horizontally along a vertical axis.

The unit (a) comprises at least one first hood positioned movably along the axis adjacent and upstream from the first of the beds (b), the

first hood being connected to a source of regenerating gas, and at least

one second hood cooperatively aligned with the first hood, adjacent to and

downstream from the first bed for recovering the spent regenerating gas

while preventing the regeneration gas from exiting with the exhaust gases.

USE - For removing contaminants e.g. N oxides, CO and SO2 from gaseous stream esp. exhaust gases from gas turbines.

ADVANTAGE - Oxidn. and absorption steps are combined into single step. Catalyst absorber can be regenerated and reused.

Dwg. 7/8

FS CPI EPI

FA AB; GI; DCN

MC CPI: E11-Q02; E31-F01A; E31-H01; E31-N05B; J01-E02D; J04-E02
EPI: X25-A04

L3 ANSWER 2 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD

AN 96-288880 [30] WPIDS

DNN N96-242397 DNC C96-092501

TI Removal of nitrous oxide(s) from diesel engine exhaust gases - using an

adsorber in series with a catalyst to reduce low and high temp. emissions,

meeting future emissions standards.

DC E36 H06 J01 Q51

IN NOIROT, R

PA (CITR) AUTOMOBILES CITROEN SA; (CITR) AUTOMOBILES PEUGEOT

CYC 4

PI EP 718478 A1 960626 (9630)* FR 14 pp F01N003-28 <--
R: DE GB IT

FR 2728300 A1 960621 (9632) 28 pp F01N003-24

ADT EP 718478 A1 EP 95-402671 951127; FR 2728300 A1 FR 94-15264 941219

PRAI FR 94-15264 941219

REP 1.Jnl.Ref ; DE 3928760; DE 4319294; EP 598916; FR 2209399; JP 1257710; US

4047895; US 4087966; WO 8604525
IC ICM F01N003-24; F01N003-28
ICS B01D053-04; B01D053-75; B01D053-94; F01N003-08
ICI B01D175:10

→ AB EP 718478 A UPAB: 960731

The exhaust gases from a diesel engine are treated to remove nitrous oxides. Treatment occurs in a catalytic converter (12) positioned in the

inlet to the exhaust pipe (8a). The catalyst is surrounded by a gas collection chamber (3) which contains an adsorber (15) of oxides of nitrogen. Exhaust gases circulate turbulently through this chamber in contact with the adsorber, then pass through the catalyst.

USE - Treatment of exhaust gases from a diesel engine to reduce emissions of oxides of nitrogen to within the standards which will be required by the year 2000.

ADVANTAGE - The catalyst only works to convert nitrous oxides to nitrogen and oxygen at high temps., so normally the gases would not be treated until they and the catalyst had warmed up to the required temp.

The adsorbent used adsorbs nitrous oxides at lower temps., then releases

them again at higher temps., when the catalyst is working. Use of an adsorber and catalyst in series reduces the amount of nitrous oxides being

exhausted into the atmos..

Dwg.1/10

FS CPI GMPI

FA AB; GI; DCN

MC CPI: E11-Q02; E31-H01; H06-C03B; J01-E02B; J01-E02D; N06

L3 ANSWER 3 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD

AN 94-236212 [29] WPIDS

DNC C94-107448

TI Catalytic purificn. of polluted air - using element with absorbent portion

and catalytic combustion portion..

DC J04

IN BECKER, O; HAGER, H; KOLZ, S

PA (MANS) MANNESMANN AG

CYC 10

PI DE 4339025 A1 940616 (9429)* 8 pp B01D053-36 <--

EP 603986 A1 940629 (9432) DE 8 pp B01D053-36

R: AT BE CH DE FR GB IT LI LU NL

EP 603986 B1 970723 (9734) DE 7 pp B01D053-74

R: AT BE CH DE FR GB IT LI LU NL

DE 4339025 C2 970807 (9735) 8 pp B01D053-86 <--

DE 59306970 G 970828 (9740) B01D053-74

ADT DE 4339025 A1 DE 93-4339025 931109; EP 603986 A1 EP 93-250341 931208;
EP

603986 B1 EP 93-250341 931208; DE 4339025 C2 DE 93-4339025 931109; DE 59306970 G DE 93-506970 931208, EP 93-250341 931208

FDT DE 59306970 G Based on EP 603986

PRAI DE 92-4242618 921214

REP DE 4106872; DE 4209195; DE 4209198; EP 485179; GB 2252968; US 4234549

IC ICM B01D053-36; B01D053-74; B01D053-86

ICS B01D053-04; B01J035-00

→ AB DE 4339025 A UPAB: 940907

In the purification of polluted air by heterogeneous catalysis, the air is fed at room temp. by pressure or suction past a solid catalytic material-coated element to cause noxious substance absorption and, at the latest after element loading with the theoretical max. possible loading capacity, oxidn. to environmentally compatible gaseous reaction products by heating the element. The novelty is that the noxious substances are (i) absorbed on an absorbent part of the multi-part element; (ii) desorbed by heating this loaded element part; and (iii) conventionally catalytically combusted by means of a further, directly heatable, catalytic material-coated element part.

ADVANTAGE - The process allows simple purification of polluted air containing less than 100 mg/cu.m. noxious substances with increased efficiency and low energy requirements.

Dwg. 1/4

FS CPI
FA AB; GI
MC CPI: J04-E01

L3 ANSWER 4 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD
AN 94-145512 [18] WPIDS
DNN N94-114652 DNC C94-066548
TI Denitrification of engine exhaust gas without adding reducing agent -
by adsorption in adsorber in exhaust pipe, periodic desorption with hot gas and recirculation to combustion in suction air supply.
DC E36 H06 J01 Q51 Q52 X22
IN BOEGNER, W; HAAK, K; KRUTZSCH, B; WENNINGER, G; WÖNNINGER, G
PA (DAIM) DAIMLER-BENZ AG
CYC 5
PI DE 4319294 C1 940519 (9418)* 5 pp F02B047-08 <--
EP 628714 A1 941214 (9503) DE 7 pp F02D021-08
US 5457958 A 951017 (9547) 5 pp F02M025-06
EP 628714 B1 970115 (9708) DE 8 pp F02D021-08
R: DE FR GB IT
DE 59401577 G 970227 (9714) F02D021-08
ADT DE 4319294 C1 DE 93-4319294 930610; EP 628714 A1 EP 94-107169 940507;
US 5457958 A US 94-257641 940609; EP 628714 B1 EP 94-107169 940507; DE 59401577 G DE 94-501577 940507, EP 94-107169 940507
FDT DE 59401577 G Based on EP 628714
PRAI DE 93-4319294 930610
REP 02Jnl.Ref ; EP 424966; EP 460542; JP 3135417; JP 62174522; US 3699683; 2.Jnl.Ref ; JP 2187149; US 4061724; US 5164350
IC ICM F02B047-08; F02D021-08; F02M025-06
ICS F01N003-18; F01N003-20; F01N003-30
AB DE 4319294 C UPAB: 940622
an Redn. of NOx in engine exhaust gas (I) involves adsorption of NOx in

adsorber in the exhaust pipe, periodic desorption with a hot gas (II) and then reaction to N2 and O2. The novelty is that the NOx is mixed with the suction air for reaction in the combustion chamber of the engine.

NOx is adsorbed and desorbed alternately in 2 parallel adsorbers. The hot gas from the adsorber can be used for desorption. For a compression engine with a catalyst in the exhaust pipe, excess air is used in the adsorption phase and an approx. stoichiometric mixt. for the desorption phase and a small amt. of the exhaust gas stream is passed to the adsorber in the desorption phase, whilst the rest passes directly to the catalyst.

ADVANTAGE - NOx is reduced without using added reducing agent and the entire operation is confined to the engine.

Dwg.1/3

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: E31-H01; H06-C04; J01-E02B

EPI: X22-A07

L3 ANSWER 5 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD

AN 94-027984 [04] WPIDS

DNN N94-021710 DNC C94-012841

TI IC engine exhaust gas purifier with nitrogen oxide(s) absorber - can be

regenerated to remove sulphur oxide(s) poisoning by controlling oxygen content and temp..

DC E36 H06 J01 Q51

IN ASANUMA, T; GOTO, M; IGUCHI, S; KATOH, K; KIHARA, T; MURAKAMI, F; TAKESHIMA, S; TANAKA, T

PA (TOYT) TOYOTA JIDOSHA KK

CYC 4

PI EP 580389 A1 940126 (9404)* EN 27 pp F01N003-08 <--
R: DE FR GB

US 5402641 A 950404 (9519) 24 pp F01N003-20
EP 580389 B1 950920 (9542) EN 32 pp F01N003-08 <--
R: DE FR GB

DE 69300512 E 951026 (9548) F01N003-08

ADT EP 580389 A1 EP 93-305656 930719; US 5402641 A US 93-94799 930720; EP 580389 B1 EP 93-305656 930719; DE 69300512 E DE 93-600512 930719, EP 93-305656 930719

FDT DE 69300512 E Based on EP 580389

PRAI JP 92-198224 920724; JP 93-162778 930630

REP EP 492989; JP 01030643; US 4843056; WO 9307363; 2.Jnl.Ref ; JP 1030643

IC ICM F01N003-08; F01N003-20

ICS B01D053-36; B01D053-60; F01N003-18; F01N009-00

AB EP 580389 A UPAB: 940307

An IC engine exhaust gas purifier has no NOx absorber in the exhaust line

which absorbs NOx when the gas has excess oxygen and releases NOx when the

oxygen concn. decreases. Sensors determine the exhaust gas oxygen content

and either exhaust gas temp. or absorber temp.

A controller reduces the oxygen content of gas flowing into the absorber when an excess oxygen content and high temp. are detected.

The

absorber comprises alkaline-earth, rare-earth or alkali metals or oxides,

and is partic. Ba-Cu-O based. There is pref. a three-way catalyst in the

exhaust line downstream of the absorber.

USE/ADVANTAGE - For engines able to operate at lean air-fuel ratios.

Allows the absorber to be regenerated when poisoned by SOx solely by controlling engine operation.

Dwg.1/17

FS CPI GMPI

FA AB; GI; DCN

MC CPI: E11-Q02; E31-H01; H06-C04; J01-E02

L3 ANSWER 6 OF 6 WPIDS COPYRIGHT 1999 DERWENT INFORMATION LTD

AN 93-145616 [18] WPIDS

DNN N93-111258 DNC C93-064967

TI Regeneratable nitrogen oxide(s) absorber for internal combustion engines -

comprises exhaust pipe having material that can absorb or release nitrogen

oxide(s), and nitrogen oxide(s) decomposition catalyst fitted downstream.

DC E36 H06 J01 Q51

IN HIROTA, S; SETO, S; TAKESHIMA, S

PA (TOYT) TOYOTA JIDOSHA KK

CYC 4

PI EP 540280 A1 930505 (9318)* EN 31 pp F01N003-28 <--
R: DE FR GB

US 5388406 A 950214 (9512) 27 pp F01N003-20

EP 540280 B1 951011 (9545) EN 32 pp F01N003-28 <--

R: DE FR GB

DE 69205389 E 951116 (9551) F01N003-28

ADT EP 540280 A1 EP 92-309801 921026; US 5388406 A Cont of US 92-967599
921028, US 93-118700 930910; EP 540280 B1 EP 92-309801 921026; DE
69205389

E DE 92-605389 921026, EP 92-309801 921026

FDT DE 69205389 E Based on EP 540280

PRAI JP 91-308245 911029; JP 92-219145 920818

REP 2.Jnl.Ref ; DE 3928760; EP 503882; JP 03135417; JP 60147220; US
3795730;

02Jnl.Ref ; JP 3135417

IC ICM F01N003-20; F01N003-28

ICS B01D053-36; B01D053-46; B01D053-54; F01N003-08

AB EP 540280 A UPAB: 931112

A NOx absorber comprises an exhaust pipe (6) equipped with a material
(2)

that can either absorb or release NOx cpds., and a NOx decomposition
catalyser (4) fitted downstream. When below a threshold temp., the
material (2) absorbs NOx cpds. from the exhaust gas under oxidising
conditions. These cpds. are later released to generate the material by
heating the material (2) to above this threshold temp., using a heater
(24). This cycle is then repeated so that the material is regularly

regenerated to allow it to continue absorbing the NOx cpds..

USE/ADVANTAGE - To provide a NOx absorber system for use with lean-burn internal combustion engine exhaust systems so the absorbent material can be regenerated without using high exhaust temperatures,

so

increasing design freedom regarding it's location.

Dwg.1/19

FS CPI GMPI

FA AB; GI; DCN

MC CPI: E31-H02; H06-C04; J01-E02